

# Michal Arbilly

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## POSITIONS HELD

- 2019–present Lecturer, Department of Biology and Institute for Quantitative Theory and Methods, Emory University
- 2016–2018 Instructor, Department of Biology, Emory University
- 2015–2016 Independent postdoctoral fellow, Department of Biology, Emory University
- 2014–2015 Visiting Scholar, Department of Psychology, University of California, Berkeley. Host: Lucia Jacobs
- 2012–2013 Postdoctoral fellow, School of Biology, University of St Andrews. With Kevin Laland
- 2010–2011 Postdoctoral fellow, Department of Biology, Stanford University. With Marc Feldman

## EDUCATION

- 2011 PhD in Zoology, Tel Aviv University. Thesis title: *Evolution of individual and social learning in a social foraging game: Theoretical analysis*. With Arnon Lotem and Uzi Motro
- 2005 MSc in Genetics, The Hebrew University of Jerusalem. Thesis title: *An integrative approach to mapping genes affecting complex traits: Application for neuropathic pain in a mouse model*. With Ariel Darvasi
- 2003 BSc in Life Sciences and Psychology, The Hebrew University of Jerusalem

## FELLOWSHIPS AND AWARDS

- 2006–2010 Dean's fellowship for outstanding graduate students, Faculty of Life Sciences, Tel Aviv University
- 2008 Adesman travel award, Department of Zoology, Faculty of Life Sciences, Tel Aviv University
- 2002 Summer research scholarship, Silberman Institute for Life Sciences, The Hebrew University of Jerusalem
- 2000–2001 Undergraduate full scholarship, The Hebrew University of Jerusalem

## TEACHING

### Instructor

- 2018 *Evolutionary Biology* (co-Instructor). Department of Biology, Emory University
- 2017 *Behavioral Ecology: A Quantitative Approach*. Department of Biology, Emory University
- 2016 *Supervised Reading*. Department of Biology, Emory University
- 2015–2017 *Freshman Seminar: Evolutionary Approaches to Human Behavior*. Department of Biology, Emory University
- 2013 *Animal Behaviour: A Quantitative Approach* (co-Instructor). School of Biology, University of St Andrews

### Teaching Assisstant

- 2009–2010 *Evolution*. Faculty of Life Sciences, Tel Aviv University

### Guide

- 2007–2010 The I Meier Segals Garden for Zoological Research, Tel Aviv University

## PUBLICATIONS

- Arbilly, M** (2018) High-magnitude innovators as keystone individuals in the evolution of culture. *Philosophical Transactions of the Royal Society B, Biological Sciences* 373: 20170053.
- Arbilly, M**, Lotem A (2017) Constructive anthropomorphism: a functional evolutionary approach to the study of human-like cognitive abilities in animals. *Proceedings of the Royal Society B, Biological Sciences* 284: 20171616.
- Arbilly, M**, Laland KN (2017) The magnitude of innovation and its evolution in social animals. *Proceedings of the Royal Society B, Biological Sciences* 284: 20162385.

- Burton-Chellew M, Kacelnik A, **Arbilly, M**, dos Santos M, Mathot KM, McNamara JM, Mengel F, van der Weele J, Vollan B (2017) The ecological and economic conditions of exploitation strategies. In: *Investors and Exploiters in Ecology and Economics: Principles and Applications*. Ed. by LA Giraldeau, P Heeb, M Kosfeld. Vol. 21. Strüngmann Forum Reports. Series editor J Lupp. Cambridge, MA: MIT Press.
- Arbilly, M** (2015) Understanding the evolution of learning by explicitly modeling learning mechanisms. *Current Zoology* 61: 341–349.
- Arbilly, M**, Weissman DB, Feldman MW, Grodzinski U (2014) An arms race between producers and scroungers can drive the evolution of social cognition. *Behavioral Ecology* 25: 487–495.
- Arbilly, M**, Laland KN (2014) The local enhancement conundrum: in search of the adaptive value of a social learning mechanism. *Theoretical Population Biology* 91: 50–57.
- Boogert NJ, **Arbilly, M**, Muth F, Seed AM (2013) Do crows reason about causes or agents? the devil is in the controls. *Proceedings of the National Academy of Sciences of the United States of America* 10: E273.
- Arbilly, M**, Motro U, Feldman MW, Lotem A (2011a) Recombination and the evolution of coordinated phenotypic expression in a frequency-dependent game. *Theoretical Population Biology* 80: 244–255.
- Arbilly, M**, Motro U, Feldman MW, Lotem A (2011b) Evolution of social learning when high expected payoffs are associated with high risk of failure. *Journal of the Royal Society Interface* 8: 1604–1615.
- Arbilly, M**, Motro U, Feldman MW, Lotem A (2010) Co-evolution of learning complexity and social foraging strategies. *Journal of Theoretical Biology* 267: 573–581.
- Devor M, Gilad A, **Arbilly, M**, Nissenbaum J, Yakir B, Raber P, Minert A, Pisanté A, Darvasi A (2007) Sex-specific variability and a 'cage effect' independently mask a neuropathic pain quantitative trait locus detected in a whole genome scan. *European Journal of Neuroscience* 26: 681–688.
- Arbilly, M**, Pisanté A, Devor M, Darvasi A (2006) An integrative approach for the identification of quantitative trait loci. *Animal Genetics* 37, Suppl 1: 7–9.
- Devor M, Gilad A, **Arbilly, M**, Yakir B, Raber P, Pisanté A, Darvasi A (2005) Pain1: a neuropathic pain qtl on mouse chromosome 15 in a c3hxc58 backcross. *Pain* 116: 289–293.

## RECENT CONTRIBUTIONS TO SCIENTIFIC CONFERENCES

- 2018 The Physics of Behavior: Movement, Control and Learning, The Aspen Center for Physics. Aspen, CO, USA. Talk: *How thieves can promote cognitive evolution: hints from clever birds.*
- 2016 The 16th International Society for Behavioral Ecology meeting. Exeter, UK. Talk: *Pilfering may impose limits on cachers' long-term memory.*
- 2015 The Ernst Strüngmann Forum: *Evolutionary and Economic Strategies for Benefitting from Other Agents Investments.* Frankfurt, Germany
- 2014 The 15th International Society for Behavioral Ecology meeting. NYC, NY, USA. Poster: *Cognitive and social factors shaping the evolution of innovative behavior.*
- 2013 The Evolution of Behavioural Mechanisms, Association for the Study of Animal Behaviour winter conference. London, UK. Talk: *Complex interactions between individual and social learning processes shape their evolution.*
- 2013 Behaviour, annual meeting of the International Ethological Conference and the Association for the Study of Animal Behaviour. Newcastle, UK. Talk: *The local enhancement conundrum: In search of the adaptive value of a social learning mechanism.*

## EXTERNAL REFEREE FOR SCIENTIFIC JOURNALS

Animal Behaviour; Animal Cognition; Behavioral Ecology; Biology Letters; Journal of Evolutionary Biology; Journal of the Royal Society Open Science; Learning & Behavior; Proceedings of the Royal Society B; Theoretical Population Biology.